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## Professional Experience

- 2005-Present Technical Staff Member, MPA-CINT, Los Alamos National Laboratory. Gold and silver nanocluster synthesis, complex nanoarchitectures, biosensors for threat reduction and tuberculosis.
- 2004-2005 Technical Staff Member, Bioscience Division, Los Alamos National Laboratory. Biosensors for biothreat reduction, tuberculosis, and breast cancer. Nanobio-composites.
- 2002- 2004 Directors Funded Postdoctoral Fellow, Bioscience Division, Los Alamos National Laboratory. Biosensors for biothreat reduction and tuberculosis. Ligand development. Research Advisors: Drs. Basil I. Swanson and Andrew M. Bradbury
- 1996-2002 Graduate Research Assistant and GOF Fellow, Department of Chemistry, University of California at Santa Barbara. Colligative properties of lipophilic metal chelates. Isolation, structure determination, and reactivity of marine natural products and vanadium bromoperoxidase. Research Advisor: Prof. Alison Butler
- 1994-1995 Research Associate, Department of Human Genetics, University of Utah. NF1 DNA mutation analysis and detection. Research Advisor: Prof. Richard Cawthon
- 1991-1994 Undergraduate Research Associate, Department of Biology, University of Utah. Isolation, synthesis, and structure-function relationship of marine natural products (conotoxins). Research Advisor: Distinguished Prof. Baldomero Olivera and Prof. Micheal MacIntosh

## Publications

Sharma, J., Yeh, H.-C., Yoo, H., Wenre, J.H., Martinez, J.S. "A complimentary palette of fluorescent silver nanoclusters," *Chem. Comm.* Submitted (Dec. 2009)

Bao, Y., Yeh, T., Sharma, J., Zhong, C., Werner, J., Martinez, J.S. "Formation and Stabilization of Fluorescent Au Nanoclusters using Small Molecules," *J. P. C. C.* accepted (2010)

Mukundan, H., Xie, H., Grace, W.K., Anderson, A.S., Price, D., Martinez, J.S., Hartman, N., Swanson, B.I. "Quantitative Multiplex Detection of Pathogen Biomarkers on Multichannel Waveguides" *Analytical Chemistry*, accepted (2010)

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Mukundan, H., Holt, A., Shively, J.E., Martinez, J.S., Grace, K., Grace, W.K., Swanson, B.I. "Planar optical waveguides for the quantitative detection of tumor markers" *Sensors & Actuators B.* 138 (2): 453-460 2009

Martin, R., Wang, H.L., Zhong, C., Bao, Y., Martinez, J.S., Shreve, A., Iyer, S., Iyer, R. "Impact of physiochemical properties of engineered fullerenes on key biological responses." *Toxicol. & App. Pharmacol.* 234(1), 58-67(2009).

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Bao, Y., Zhong, C., Vu, D.M., Temirov, J.P., Dyer, R.B., Martinez, J.S. "Nanoparticle free synthesis of fluorescent gold nanoclusters at physiological temperature." *J. Phys. Chem. C* 111(33), 12194-12198 (2007). [among most accessed in the *J. Phys. Chem. C* in the third quarter of 2007]

Zhong, C., Bao, Y., Vu, D.M., R.B. Dyer, Martinez, J.S. "Fabrication of fluorescent cellular probes: hybrid dendrimer/gold nanoclusters." *Mater. Res. Soc. Symp. Proc.* 1007 (2007, 1007-S15-07)

Martinez, J.S., Butler, A. "Marine amphiphilic siderophores: marinobactin structure, uptake, and microbial partitioning." *J. Inorganic Biochem.* 101(11-12), 1692-1698 (2007).

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Kiss, C., Fisher, H., Pesavento, E., Dai, M., Valero, R., Ovecka, M., Nolan, R., Phipps, M.L., Velappan, N., Chasteen, L., Martinez, J.S., Waldo, G.S., Pavlik, P., Bradbury, A.R.M. "Antibody binding loop insertions as diversity elements," *Nuc. Acids. Res.* 34(19), e132 (2006).

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## **Patents**

Synthesis of fluorescent metal nanoclusters. J.S. Martinez, R. B. Dyer, D. M. Vu, C. Zhong, Y. Bao. Nonprovisional Patent Application number: 11/786,190, 2007

Planar optical waveguide based sandwich assay sensors and processes for the detection of biological targets including early detection of cancers. Martinez, J.S., Swanson, B.I., Shively, J.E. Li, L. Nonprovisional Patent Application number: S-104,952, 2005.

Planar optical waveguide based sandwich assay sensors and processes for the detection of biological targets including protein markers, pathogens and cellular debris. Martinez, J.S., Swanson, B.I., Grace, K.M., Grace, W.K., Shreve, A.P. Nonprovisional Patent Application number: S-102,367, 2005. Full Patent

Modulated Optical Waveguide-Sensor, B.I. Swanson, J.G. Schmidt, J.S. Martinez, A. A. Anderson, Patent Application, 60/649,753, 2005, provisional.